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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,556	06/23/2003	Timothy S. Milliron	021751-001610US	1250

68218 7590 04/03/2007

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EXAMINER	
CHOW, JEFFREY J	
ART UNIT	**PAPER NUMBER**
2628	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/602,556	MILLIRON, TIMOTHY S.	
	Examiner	Art Unit	
	Jeffrey J. Chow	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 21 – 40, filed 15 March 2007, have been fully considered but they are not persuasive.

Applicant argues that Ahlquist et al. (US 6,459,439) does not teach or suggest a graphical warp through transformation of an unperformed model to a deformed model (page 11). Ahlquist discloses an "M" shaped model being deformed (Figures 1 - 4). Ahlquist discloses the deformed model of the letter M by the use of the start point to the end point, the length, the strength, and the transformation function (Figures 2a – 2h, 3a – 3j, and 4a – 4k). The model of an "M" in Figure 1 reads on the undeformed model and the model of a deformed "M" in Figures 2 – 4 reads on the deformed model as broadly claimed.

Applicant argues that Ahlquist does not teach or suggest receiving a set of feature specifications, each feature specification comprising a source feature and a target feature (page 12). Ahlquist teaches three tools (pull tool, push tool, area tool) where the user inputs what point on the original model the user wants to modify (Figure 2: 21a for pull tool, Figure 3: 33 and 35 for push tool, Figure 4 for area tool). It is clear that the user provides at least a start point and an end point to the program.

Applicant argues that Ahlquist does not teach or suggest receiving, independent of the set of feature specifications, a set of transformations for mapping the source feature to the target feature in each feature specification in the set of feature specifications (pages 12 and 13). Ahlquist discloses predetermined formulas and function for the pull tool (column 5, lines 26 – 31 and column 6, lines 4 – 24) and different shapes for the push tool (column 7, lines 37 – 39) and

predetermined formulas for the area tool (column 8, lines 39 – 42). These functions, other than the user defined functions, are already defined by the program, therefore, it is clear that these functions are independently received from the user defining the start point and the end point for the program. Ahlquist discloses that these functions define other points on the model are deformed (column 5, lines 26 – 31) as clearly shown between the points of 22a and 22b are deformed to produce a shape of the curve as the points between 13 and 22a and the points between 14 and 22b are not deformed (Figure 2).

Applicant argues that Ahlquist does not teach or suggest receiving a set of strength fields defined over the undeformed model for scaling the magnitude of transformations in the set of transformations to generate a set of scaled transformation and receiving, independent of the set of strength fields, a set of weighting fields defined over the undeformed model for determining the relative influence of the set of scaled transformations (pages 13 – 16). Ahlquist discloses a length field and a pressure field for the push tool and a size field, strength field, size pressure field, and strength pressure field for the area tool (Figures 2 and 4). Ahlquist discloses the length field is adjusted by the user that affects the endpoints 22a and 22b (column 5, lines 19 – 23 and Figure 2). The length field reads on the strength field and the endpoints 22a and 22b reads on the scaling of the transformation as broadly claimed. Ahlquist further discloses the pressure field can be used to vary the length and even the pressure can be set while the tool is being use (column 6, lines 25 – 35). The pressure field reads on the weighting field and the pressure field influence the endpoints 22a and 22b reads on the weighting fields determine a relative influence of the set of scaled transformation as broadly claimed.

Applicant argues that claim 30 is not similar in rationale as to claim 21. Claim 30 is much broader than claim 21, therefore the similar rationale applied to claim 21 is applied to claim 30. As broadly claimed, a parameter set can be a set of transformations a set of strength fields, and a set of weighting fields. Ahlquist discloses that the users can define a function for the tool, the length field, and the pressure field for the pull tool (column 5, line 10 – column 6, line 48) in where these parameters are parameter sets.

Applicant argues that the claims are statutory (pages 18 – 24). "Generating the deformed model using a graphical warp through transformation of the undeformed model to the deformed model" is a final result of the invention, but it does not produce a tangible and concrete result, therefore is non-statutory as the final result is nothing more than an abstract idea within a processor.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 21 – 31 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 21 – 31 appear to be directed to an abstract idea rather than a practical application of the idea. Practical application produces a useful, tangible and concrete result. In determining whether the claim is for a "practical application," the focus is not on whether the steps taken to achieve a particular result are useful, tangible and concrete, but rather that the final result achieved by the claimed invention is "useful, tangible and concrete." The claimed invention does not resulting a physical transformation nor does the claimed

invention appear to provide a useful, concrete and tangible result. Specifically, the claimed invention does not appear to produce a tangible result because merely generating the deformed model using a graphical warp through transformation of the undeformed model to the deformed model is nothing more than thoughts or computations within a processor. It fails to use or make available for use of the final result. Please see pages 32 – 41 and 52 – 54 of the Interim Guidelines.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 21 – 26 and 28 – 40 are rejected under 35 U.S.C. 102(e) as being anticipated by Ahlquist et al. (US 6,459,439).

Regarding independent claim 21, Ahlquist discloses a letter M being deformed (Figure 1), which reads on the claimed receiving information specifying the undeformed model. Ahlquist discloses a selected location along a path 21a that is pulled to a desired location 21b (column 5, lines 10 – 13 and Figures 2a, 2c, 2e, and 2g), which reads on the claimed receiving a set of feature specifications, each feature specification comprising a source feature and a target feature. Ahlquist discloses different tools that would deformed the model, such as step function (column 6, lines 11 – 19) or a cosine function (column 6, lines 4 – 12) or user defined function

(column 6, lines 21 – 24), which reads on the claimed receiving, independent of the set of feature specifications, a set of transformations for mapping the source feature to the target feature in each feature specification in the set of feature specifications. Ahlquist discloses length that controls the scale of the tool (column 5, lines 10 – 48), which reads on the claimed receiving a set of strength fields defined over the undeformed model for scaling the magnitude of transformations in the set of transformations to generate a set of scaled transformations. Ahlquist discloses strength settings (column 7, lines 55 – 66), which reads on the claimed receiving, independent of the set of strength fields, a set of weighting fields defined over the underformed model for determining the relative influence of the set of scaled transformations. The length and the strength are determined independent from each other as the length is the distance of the tool travel (column 3, lines 15 – 36) and the strength can be set by keys from the keyboard (column 7, lines 61 – 66) and the start location and the end location are independent from the transformation function as the user can selected the desired transformation function (column 3, lines 15 – 36). Ahlquist discloses the deformed model of the letter M by the use of the start point to the end point, the length, the strength, and the transformation function (Figures 2a – 2h, 3a – 3j, and 4a – 4k), which reads on the claimed generating the deformed model using a graphical warp through transformation of the undeformed model to the deformed model by applying the set of transformation, the set of strength fields, and the set of weighting fields to the undeformed model.

Regarding dependent claim 22, Ahlquist discloses path 10 at location 21a out to 21b (column 15, lines 20 – 30), which reads on the claimed set of feature specifications comprises a

first feature specification comprising a source feature identifying a source position of a continuous feature and a target feature identifying a target position of the continuous feature.

Regarding dependent claim 23, Ahlquist discloses a tool that is a step function that modifies the path to look like a layered wedding cake (column 6, lines 19 – 24), which reads on the claimed set of feature specifications comprises a first feature specification comprising a source feature identifying a source position of a discrete feature and a target feature identifying a target position of the discrete feature.

Regarding dependent claim 24, Ahlquist discloses path 10 at location 21a out to 21b (column 15, lines 20 – 30), which reads on the claimed set of feature specifications comprises a first feature specification comprising a source feature identifying a source position of a feature point and a target feature identifying a target position of the feature point.

Regarding dependent claim 25, Ahlquist discloses representing the path in an XY parameters (column 9, line 61 – column 10, lines 19) and the system could be used for 3-dimensional computer graphics, as well as motion or animation graphics (column 5, lines 6.– 9) where it is inherent that animation have consecutive images or frames, which reads on the claimed set of feature specifications comprises a first feature specification comprising a source feature identifying a source coordinate frame and a target feature identifying a target coordinate frame.

Regarding dependent claim 26, Ahlquist discloses a path 10 (column 15, lines 20 – 30 and Figures 2a – 2h), which reads on the claimed set of feature specifications comprises a first feature specification comprising a source feature identifying a source curve and a target feature identifying a target curve.

Regarding dependent claim 28, Ahlquist discloses path 10 at location 21a out to 21b (column 15, lines 20 – 30) and a tool that is a step function that modifies the path to look like a layered wedding cake (column 6, lines 19 – 24), which reads on the claimed set of feature specifications comprises a first feature specification comprising a source continuous feature and a target continuous feature and a second feature specification comprising a source discrete feature and a target discrete feature.

Regarding dependent claim 29, Ahlquist discloses the pressure being added to the length and the difference in pressure affects the deformation of the object (column 6, lines 25 – 35), which reads on the claimed computing a sum of the set of scaled transformations weighted by the set of weighting fields, for deforming the undeformed model to generate the deformed model. The sum of the pressure and the length reads on the claimed sum. The pressure and the length reads on the claimed set of scaled transformations weighted by the set of weighted fields.

Regarding independent claims 30, 32, 34, 37, 39, and 40, claims 30, 32, 34, 37, 39, and 40 are similar in scope as to claim 21, thus the rejections for claim 21 hereinabove is applicable to claims 30, 32, 34, 37, 39, and 40. Ahlquist discloses processor and a memory (column4, line 62 – column 5, line 6), which reads on the claimed processor and the claimed memory coupled to the processor, the memory configured to store a plurality of instructions executable by the processor. Ahlquist discloses pressure parameter range from 0 and up (column 6, lines 25 – 35) and a strength field ranging from 0% - 100% (column 8, lines 16 – 25), which reads on the claimed parameter set.

Regarding dependent claims 35 and 36, claims 35 and 36 are similar in scope as to claims 22 and 23, thus the rejections for claims 22 and 23 hereinabove is applicable to claims 35 and 36.

Regarding dependent claims 31, 33, and 38, Ahlquist discloses users can input different transfer functions, such as the equation 1 stated where the function is parametized by D and length (column 6, lines 4 – 24), which suggests the claimed set of transformations comprises parameterized transformation. Ahlquist discloses the length, pressure, and strength can be inputted through a keypad or determined through a pressure sensitive tablet (column 3, lines 15 – 35 and column 7, lines 61 – 66), which suggests the claimed determining comprises applying a sampling function to the set of parameterized transformation, the set of strength fields, and the set of weighting fields to generate a set of discretized transformations, a set of sampled strength fields, and a set of sampled weighting fields and the claimed determining the deformation function comprises computing the deformation function using the set of discretized transformations, the set of sampled strength fields, and the set of sampled weighting fields. Ahlquist discloses manipulation of Bezier curve (column 8, lines 54 – 67 and column 9, line 61 – column 10, line 19) and noted that Bezier curves can be represented in parametric form (column 1, lines 25 – 39).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ahlquist et al. (US 6,459,439).

Regarding dependent claim 27, Ahlquist discloses the system could be used for 3-dimensional computer graphics, as well as motion or animation graphics (column 5, lines 6 – 9), which suggests and reads on the claimed feature specification comprises a first feature specification comprising a source feature identifying a source surface and a target feature identifying a target surface. It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Ahlquist's system by manipulation 3-D surfaces. One would be motivated to do so because this would allow manipulation of computer graphic objects and editing tools that allow the reshaping of surfaces that comprise the graphics objects.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey J. Chow whose telephone number is (571)-272-8078. The examiner can normally be reached on Monday - Friday 10:00AM - 5:00PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on (571)-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JJC

KEE M. TUNG
SUPERVISORY PATENT EXAMINER